Commerce Division
Discussion Paper No. 73

AUDIT FEES IN NEW ZEALAND AFTER REMOVING RESTRICTIONS ON COMPETITION

David Hay*
Andy C. H. Lee**

July 1999

Commerce Division
PO Box 84
Lincoln University
CANTERBURY

Telephone No: (64) (3) 325 2811
Fax No: (64) (3) 325 3847
E-mail: hay@lincoln.ac.nz

ISSN 1174-5045
ISBN 1-877176-50-8

* Senior Lecturer, Accountancy Group, Commerce Division, Lincoln University
** Deloitte Touche Tohmatsu, Christchurch

Correspondence Address: David Hay, Accountancy Group, Commerce Division, PO Box 84, Lincoln University, New Zealand; Tel: +64 (3) 325 2811; Fax: +64 (3) 325 3847; E-mail: hay@lincoln.ac.nz

Abstract

Audit fees decreased in the United States and Australia after professional accounting bodies removed restrictions on competition in their professional regulations. In New Zealand, the professional body amended its regulations in 1985 allowing auditors to advertise their services, and again in 1991 to allow direct solicitation of potential clients. This study examines audit fees in New Zealand subsequent to these amendments.

Audit fees increased between 1985 and 1990, but decreased between 1990 and 1995 after the additional changes to further increase competition. Explanations that allow for both the unexpected increase and the expected decrease include another change to professional regulations, which permitted New Zealand firms to use the names of their international Big Eight affiliates from 1984; and general reforms to the New Zealand economy, which was unusually protected from competition in 1985, but considerably more open to competition in 1991.

Key words: competition; audit fees; matched-pair first difference; audit firms; New Zealand.

Acknowledgment

The authors appreciate the constructive comments of Fawzi Laswad, Ann Neale and May Yeung, and the administrative assistance of Rob Hundleby. Helpful comments were also received from the participants at seminars at Lincoln University, the University of Canterbury and the University of Auckland.

Contents

List of Tables

1. Introduction

Audit fees declined for companies in the US and Australia and for the public sector in the US after the professional accounting bodies amended their regulations to remove restrictions on competition (Maher, Tiessen, Colson and Broman, 1992; Craswell, 1992; Sanders, Allen and Korte, 1995). The New Zealand Society of Accountants (NZSA) (now known as the Institute of Chartered Accountants of New Zealand, ICANZ) also amended its Code of Ethics in 1985 to allow its members to advertise their services, then in 1991 made further changes to allow direct solicitation of potential clients. The aim of this research, therefore, is to examine whether audit fees in New Zealand decreased after the amendments to the NZSA's Code of Ethics. The different pattern of change in New Zealand, and other changes to the New Zealand economy around this period, allow a better understanding audit competition and the effects of deregulation.

The results indicate that real audit fees increased for the period from 1985 to 1990, but decreased from 1990 to 1995. The initial increase can be explained by other factors affecting the market for audit services in New Zealand. In particular, a change to professional regulations permitted New Zealand firms to use the names of their international Big Eight affiliates from 1984. Subsequently, general reforms to the New Zealand economy made it considerably more open to competition.

The rest of the paper is organised as follows: the next section presents an overview of the audit market and market competition by providers of audit services. A literature review and hypothesis development are provided in the third section. Section 4 details the research methodology. Section 5 presents the results and the last section discusses them.

2. Audit Services Market and Competition

The audit services market in many countries has come under scrutiny because of concerns about monopolistic pricing arising from a small and decreasing number of major audit firms. Such concerns about the possible existence of non-competitive pricing in audit market were reported in the US in the 1970s (Hermanson et al., 1987). Similar concerns were evident in Canada, the UK, Australia and New Zealand; and more recently the competition authorities in Italy announced in December 1998 that they were investigating the Big Five auditing firms for allegedly running a price-fixing cartel (*Accountant*, 1999).

Several characteristics of the audit market appear to indicate a lack of competition. In many countries, legislation provides that only qualified auditors are allowed to audit financial statements and issue auditors' reports. In New Zealand, the Financial Reporting Act 1993 and the former Companies Act 1955 require companies which have issued securities to the public to have their financial statements audited by a qualified auditor. A qualified auditor is usually a person (or a firm) who is a member of the New Zealand Society of Accountants.[1]

Moreover, the structure of the audit market in most countries appears to be oligopolistic. Hermanson et al. (1987, 15) suggest that "the auditing segment of the accounting profession can be classified as oligopolistic since over 95 percent of all sales dollars of publicly-held companies [in the US] are audited by the eight largest international firms". In New Zealand, Johnson, Walker and Westergaard (1995) find that 96.4% of the total audit fees in their sample were earned by only five large international audit firms.

In the US, concerns regarding the extent of competition in the auditing profession led to investigations by the Federal Trade Commission and the Department of Justice (Hermanson et al., 1987; Maher et al., 1992). After these investigations commenced, the American Institute of Certified Public Accountants (AICPA) changed its professional rules in 1979 so that members could advertise their services, tender for audit contracts and solicit clients directly from other members (Hermanson et al., 1987).

Similar changes were made by professional accounting bodies in other countries. The provincial bodies of the Canadian Institute of Chartered Accountants (CICA) amended their standards of professional conduct between 1979 and 1981 (Anderson and Zéghal, 1994). The Institute of Chartered Accountants in Australia (ICAA) made a similar change in 1984 (*Accountants' Journal*, 1984).

In New Zealand, the NZSA amended its Code of Ethics in 1985 (*Accountants' Journal*, 1985). After these changes, the NZSA then allowed advertising, prohibited direct solicitation of another member's clients, and was silent about tendering. These changes were inspired to some extent by similar changes in Australia, the US and the UK (*Accountants Journal*, 1984).

Further changes were made in 1991 as part of a comprehensive review of the NZSA Code of Ethics. The principles behind the sections on promotion of professional services were described as: "members are permitted to promote their professional services as they see fit,

provided such promotion is carried out in a manner which is consistent with the good reputation of the profession" (Frankham, 1991). The changes included making tendering for audit contracts "implicitly permitted" and removing the rule against direct solicitation of clients.

The second set of changes took place in a considerably different business environment. A "strengthened and comprehensive competition law" (Vautier, 1987) had come into effect (the Commerce Act 1986). Perhaps more significantly, there had been changes throughout the economy to deregulate New Zealand business and expose it to international competition. According to Evans, Grimes, Wilkinson and Teece (1996, 1856) the economic reforms were described by an experienced OECD observer as "one of the most notable episodes of liberalisation that history has to offer." New Zealand went from 'pervasive' government regulation to an economy open to competition (Evans et al., 1996). The changes did not directly affect auditing, but they made it more likely that any professional restriction on competition would be challenged by regulatory authorities. They also made business managers much more concerned with obtaining the most competitive providers of services, including auditing services.

3. Literature Review

There are a number of studies that examine the determinants of audit fees, particularly with a view to assessing whether the market for audit services is competitive. Other studies examine changes in audit fees after changes to professional regulations.

3.1 Audit fee studies

Considerable empirical research into audit fees, and especially the issue of competition, is based on Simunic (1980). In order to assess whether the audit services market was competitive, Simunic tests whether audit fees are higher or lower depending on whether client companies are large or small, and whether the audit firms are members of the Big Eight major international audit firms, taking into account variations in other client-specific factors that influence audit fees. These client-specific factors include size of the auditee measured by total year-end assets; complexity, measured by the number of consolidated subsidiaries;

and problem components which require specific audit procedures and for which valuation is complex, measured by the proportion of receivables and inventory.

Simunic (1980) classifies auditees into two size categories, small and large, and the auditors as Big Eight and non-Big Eight firms. According to Simunic (1980), the small auditee segment has little or no barrier to entry for the non-Big Eight firms, and he assumes that the level of competition for this segment of the audit market is high. Based on this assumption, he tests for any difference in audit fees between the large and small auditee segments. He suggests there are three possible explanations for any variation in fees in the different segments. These are:

- Competition with a differentiated product. If the Big Eight firms charge higher fees in both the competitive (small auditee) and large auditee segments, then this indicates a superior product for which they can charge a premium.
- Scale economies and diseconomies. If the Big Eight charge lower fees than non-Big Eight firms, this can be explained as efficiencies that they pass on to their clients. Alternatively, the smaller audit firms may suffer diseconomies, especially with large auditees for which they may not have sufficient resources.
- Monopoly pricing. This is evident if the Big Eight charge higher fees in the large auditee segment (where there is less competition) but not in the small auditee segment (where there is more competition).

The results of Simunic's (1980) tests show that Big Eight firms charge lower audit fees, after the other variables are taken into account, in both large and small auditee segments, although the difference is not significant. Simunic concludes that the audit market was competitive and the Big Eight firms enjoyed economies of scale, which they passed on to their clients.

Subsequent studies show varying results. Palmrose (1986) and Francis and Simon (1987) find that Big Eight audit fee premiums existed in the small auditee segment in the US market. The results are consistent with there being competition and a differentiated product.

In the Canadian audit market, Chung and Lindsay (1988) find no significant price difference between Big Eight and non-Big Eight firms. However, a later study by Anderson and Zéghal (1994) concludes that the Big Eight firms charged a fee premium in the small auditee segment. These results are again consistent with competition and a differentiated product.

Studies in Australia find that there is a premium charged in the small auditee segment (Francis, 1984; Francis and Stokes, 1986). Francis (1984) examines 1970s data and finds that there was also a premium in the large auditee segment, consistent with a differentiated product. Francis and Stokes (1986) find no premium in the 1980s in the large auditee segment, consistent with economies of scale. Both of these results are consistent with competition, and not consistent with monopoly pricing.

The results of New Zealand studies as to whether the Big Eight firms earned a fee premium also vary. This is possibly because, prior to 1983, audit firms in New Zealand were prohibited by the NZSA from using their international affiliates' names (Firth, 1993). Firth (1985) finds no evidence of a fee premium in either the large or small auditee segments during 1981 to 1983. This is also not consistent with monopoly pricing, although Firth (1985) comments that there was "no evidence of active price competition." Subsequently, however, after the restriction on using the names of international affiliate firms was lifted in 1984, the Big Eight firms replaced their local names with their international affiliates' names. Firth (1993) finds that by 1986 the Big Eight were earning audit fee premiums. Johnson et al. (1995) also find evidence that fee premiums were earned by the Big Five firms (those of the then Big Six with a substantial presence in New Zealand[2]).

Johnson et al.'s results (1995) appear to provide evidence of monopoly pricing, although this is not the explanation the authors present. The study shows that there is a significant premium for the Big Five firms in the market for audits of large listed companies, but no premium for small listed companies. This finding can be interpreted according to Simunic (1980) as indicating monopoly pricing.

However, Johnson et al. (1995, p. 87) prefer an alternative explanation, "the combination of greater complexity (size) and greater public scrutiny (listing status) increases the perceived value of a Big Five audit, while the existence of either factor alone does not." Johnson et al. (1995) do not explain how this increased value to the purchaser of audit services leads to a premium being charged by the supplier – unless there is monopoly pricing. A complicating factor is that Johnson et al. (1995) find that for unlisted companies the position is reversed. In this market segment, there is a significant fee premium for Big Five auditors of small unlisted companies, but not for large unlisted companies. This finding can be interpreted, applying Simunic (1980), as indicating competition with a differentiated product from the big audit firms, together with diseconomies of scale to the small firms. These findings therefore

do not provide overwhelming evidence of monopoly pricing in the market for audit services in New Zealand, but they do suggest that it may have been occurring in some settings at the time of Johnson et al.'s study in 1989.

3.2 Changes in Audit Fees

A further development in research into audit fees setting examines whether audit fees decreased after professional regulations were modified to increase in competition. Maher et al. (1992) examine the behaviour of audit fees before and after the AICPA amended its professional rules in 1979. Maher et al. (1992) use the matched-pair first difference method to test for the level of change in audit fees while controlling for changes in other variables found to be significant determinants of audit fees by previous researchers. The results show evidence of a significant decrease in audit fees between 1977 and 1981. The reduction in audit fees suggests that the level of competition has increased (Maher et al., 1992). However, Maher et al. (1992) note that the study period might not be sufficient for the effects of the amendments to have a significant impact on audit fees.

Sanders et al. (1995) examine changes in municipal audit fees, a different segment of the audit market. The study observes the period between 1985 and 1989 in order to test for the longer-term impact of increased competition (Sanders et al., 1995). The study shows a decrease in municipal audit fees. However, when compared with the findings of Maher et al. (1992), the results show a slower decrease in audit fees, which Sanders et al. (1995) suggest might be due to an audit fee equilibrium having been reached since deregulation.

Anderson and Zéghal (1994) study the Canadian audit market. The results do not provide evidence of a significant decrease in audit fees between 1980 and 1984, although the coefficients are in the expected direction indicating some decrease took place.

In Australia, Craswell (1992) finds that the level of audit fees decreased after changes to ICAA professional Code of Ethics, apparently indicating increased pricing competition in the audit market. The decrease is very large (about 40%) compared to benchmarks for tendering and deregulation of other professional services, and Craswell (1992) concludes the decrease is "more than would be expected from the introduction of tendering."

4. Hypotheses

Previous studies find evidence of decreased audit fees after amendments to professional regulations (Maher et al., 1992; Sanders et al., 1995; Craswell, 1992). Maher et al. (1992) examine audit fees for a five year period during which the Code of Ethics was modified; Sanders et al. examine a five year period about five years after the change in order to assess the longer term effect. Craswell (1992) bases his conclusion on the period of increasing price competition from 1980-1989, although deregulation occurred in 1984 (*Accountants' Journal*, 1984).

Therefore, the study examines firstly the hypotheses that there is a decrease in audit fees in the period after advertising became permitted (as in Maher et al., 1992); secondly in the period after further deregulation (which is also the period about five years after the initial change, as in Sanders et al., 1995); and finally the entire period. It was suggested by Maher et al. (1992) and Anderson and Zéghal (1994) that a longer period of observations is needed to produce more conclusive results.

5. Research Method

Data is obtained from financial reports of companies listed on the New Zealand Stock Exchange (NZSE). In order to be included in the study, companies must be listed both at the beginning and end of the observed periods. There are 83 companies which were listed on the NZSE throughout the first period of observation, from 1985 to 1990; and 92 companies listed for the second period, from 1990 to 1995. However, there were only 54 companies listed on the NZSE over the entire 11 years. Due to difficulties in locating the financial reports of companies which have subsequently ceased to operate, 20 companies are excluded from the first observation period of the study, and one company is excluded from the second period.

In order to assess whether the level of audit fees has changed it is necessary to take account of other determinants. In previous studies, size, complexity and auditing problems associated with certain financial statement components are significant factors influencing audit fees. These auditee factors are represented by total assets,[3] number of subsidiaries, inventory and receivables.

The relation between audit fees and these variables is not expected to be linear, and transformations to natural log of assets or square root of subsidiaries, as used in the previous studies, are carried out. Ordinary least squares regression of audit fees on these transformed variables is reported in Appendix A and shows that these variables explain a substantial proportion of the variation in audit fees. To compare audit fees in 1985 with those in 1990 and 1995 audit fees and total assets are adjusted for inflation. The Consumer Price Index is used, as in previous studies (Maher et al., 1992; Sanders et al., 1995).

To examine whether audit fees have decreased, taking into account other determinants of audit fees, the study applies a matched-pair first difference test similar to that in Maher et al. (1992). This test consists of a regression of the changes in audit fees for each company on the changes in its determinants of audit fees. The sign on the intercept in the estimated regression equation then indicates whether audit fees have increased or decreased after changes in the other variables are accounted for. A negative value indicates a decrease. The test is first carried out on the changes in fees between 1985 and 1990, then the changes in fees between 1990 and 1995, and finally the changes in fees for the combined period between 1985 and 1995.

The regression model is:

$$\Delta LNFEE_i = \beta_o + \beta_1 \Delta LNREV_i + \beta_2 \Delta SUBS^{0.5}_i + \beta_3 \Delta INV_i + \beta_4 \Delta RECV_i + \varepsilon_i$$

Where:

$\Delta LNFEE_i$	=	Natural log of external audit fees in 1990 minus natural log of external audit fees in 1985 for the $_i$th auditee; 1990 fees are converted to 1985 dollars using the CPI;
$\Delta LNASSETS_i$	=	Natural log of total assets in 1990 minus natural log of total assets in 1985 for the $_i$th auditee; 1990 assets are converted to 1985 dollars using the CPI;
$\Delta SUBS^{0.5}_i$	=	Square root of the number of consolidated subsidiaries in 1990 minus the square root of the number of consolidated subsidiaries in 1985 for the $_i$th auditee;
ΔINV_i	=	Change in the ratio of inventory to total assets between 1985 and 1990 for the $_i$th auditee;
$\Delta RECV_i$	=	Change in the ratio of receivables to total assets between 1985 and 1990 for the $_i$th auditee;

(Appropriate changes are made when comparing periods other than 1985 and 1990.)

6. Results

Table 1 presents summary statistics. External audit fees and total assets are stated in both nominal dollars and constant 1985 dollars for comparison purposes. Audit fees in constant dollar terms increased between 1985 and 1990, but decreased between 1990 and 1995. Total assets, stated in constant dollars, increased between 1985 and 1990, and showed a small decrease between 1990 and 1995. The number of subsidiaries increased between 1985 and 1990, but decreased between 1990 and 1995. Inventory as a percentage of assets decreased in both periods, while accounts receivable increased.

Table 2 shows the results of tests to ascertain whether audit fees increased or decreased in the periods 1985 to 1990, and 1990 to 1995. The study applies the Wilcoxon Signed-Rank Test to assess whether real audit fees decreased for the observed periods. This test is similar to the method used by Maher et al. (1992).

Between 1985 and 1990, most audit fees increased; between 1990 and 1995 there were more reductions than increases. There were more increases in the period 1985 to 1995. All of these results are significant.

The results of matched pair first difference testing is shown in Table 3. The model and the constant are significant in each case. The first column shows the results of tests of the hypothesis that audit fees decreased between 1985 and 1990. The results show that the constant, β_o, is positive (0.46), indicating that audit fees have increased between the years 1985 and 1990. Therefore, the null hypothesis, that there is no decrease in audit fees between 1985 and 1990, is not rejected. The increase is significant at $p \leq 0.01$.

Column 2 shows the results of tests of the hypothesis that audit fees decreased between 1985 and 1990. The results show that the constant, β_0, is negative and significant ($p \leq 0.01$). The null hypothesis is rejected. Audit fees have significantly decreased during the period from 1990 to 1995.

The last column shows the results of tests of the hypothesis that audit fees decreased between 1985 and 1995. The results show that the constant, β_0, is positive. The findings indicated that audit fees have increased between 1985 and 1995. The increase is significant at $p \leq 0.05$.

Table 1
Descriptive Statistics

Panel A: Listed in 1985 and 1990	***1985***		***1990***	
Variables	*Mean*	*(Std Dev)*	*Mean*	*(Std Dev)*
External Audit Fee ($000) - in nominal dollars	143	(472)	388	(1,159)
External Audit Fee ($000) - in 1985 dollars	143	(472)	240	(721)
Total Assets ($000) - in nominal dollars	182,486	(534,581)	661,300	(2,505,717)
Total Assets ($000) - in 1985 dollars	182,486	(534,581)	407,706	(1,557,240)
No. of Subsidiaries	8.01	(10.93)	14.20	(18.51)
Ratio of Inventory to Total Assets	0.199	(0.175)	0.174	(0.159)
Ratio of Receivables to Total Assets	0.147	(0.112)	0.156	(0.171)
Number of Companies	***63***		***63***	

Panel B: Listed in 1990 and 1995	***1990***		***1995***	
Variables	*Mean*	*(Std Dev)*	*Mean*	*(Std Dev)*
External Audit Fee ($000) - in nominal dollars	331	(952)	239	(615)
External Audit Fee ($000) - in 1990 dollars	331	(952)	213	(552)
Total Assets ($000) - in nominal dollars	546,752	(2,139,189)	562,967	(1,904,792)
Total Assets ($000) - in 1990 dollars	546,752	(2,139,189)	502,200	(1,708,604)
No. of Subsidiaries	12.30	(15.65)	10.19	(14.00)
Ratio of Inventory to Total Assets	0.158	(0.163)	0.145	(0.181)
Ratio of Receivables to Total Assets	0.130	(0.159)	0.186	(0.364)
Number of Companies	***91***		***91***	

Panel C: Listed in 1985 and 1995	***1985***		***1995***	
Variables	*Mean*	*(Std Dev)*	*Mean*	*(Std Dev)*
External Audit Fee ($000) - in nominal dollars	161	(504)	302	(734)
External Audit Fee ($000) - in 1985 dollars	161	(504)	166	(407)
Total Assets ($000) - in nominal dollars	208,127	(568,734)	777,225	(2,383,071)
Total Assets ($000) - in 1985 dollars	208,127	(568,734)	427,516	(1,323,128)
No. of Subsidiaries	8.76	(11.47)	12.98	(17.04)
Ratio of Inventory to Total Assets	0.201	(0.182)	0.158	(0.152)
Ratio of Receivables to Total Assets	0.148	(0.109)	0.177	(0.148)
Number of Companies	54		54	

Table 2
Tests for a net increase or decrease in audit fees

	Binomial Test	Wilcoxon Signed-Ranks Test (two-tailed)
1985-1990		
Change in Audit Fees (*1990 fee* [a] - *1985 fee*)		
Auditees with Decreases	12	
Auditees with Increases	51 **	
		Z = -5.25 **
Rank Sum of Decreases		241
Rank Sum of Increases		1775
1990-1995		
Change in Audit Fees (*1995 fee* [b] - *1990 fee*)		
Auditees with Decreases	59 **	
Auditees with Increases	32	
		Z = -3.41 **
Rank Sum of Decreases		2955
Rank Sum of Increases		1231
1985-1995		
Change in Audit Fees (*1995 fee* [c] - *1985 fee*)		
Auditees with Decreases	14	
Auditees with Increases	40 **	
		Z = -2.95 **
Rank Sum of Decreases		400
Rank Sum of Increases		1085

Note: [a] 1990 audit fees are adjusted to 1985 dollars by using the Consumer Price Index.

[b] 1995 audit fees are adjusted to 1990 dollars by using the Consumer Price Index.

[c] 1995 audit fees are adjusted to 1985 dollars by using the Consumer Price Index.

* Significant at $p \leq 0.05$

** Significant at $p \leq 0.01$

Table 3
Matched-pair First Difference Tests for a Change in Audit Fees

		Coefficient (Standard Error)		
Variables		**(1) 1985-1990**	**(2) 1990-1995**	**(3) 1985-1995**
Constant	β_0	0.46**	-0.197**	0.258*
		(0.087)	(0.066)	(0.128)
ΔLNASSET	β_1	0.498**	0.241**	0.241
		(0.083)	(0.059)	(0.096)
$\Delta SUBS^{0.5}$	β_2	0.126*	0.088	0.245**
		(0.052)	(0.047)	(0.075)
ΔINV	β_3	0.582	-0.27	0.875
		(0.765)	(0.587)	(0.898)
ΔRECV	β_4	2.019**	0.889	1.825*
		(0.63)	(0.456)	(0.907)
		n = 63	n = 91	n = 54
Adjusted R^2		54.8%	19.2%	29.0%
F-statistic		19.77**	6.35**	6.41**

* Significant at $p \leq 0.05$ (one-tailed test)
** Significant at $p \leq 0.01$ (one-tailed test)

ΔLNFEE	=	Natural log of external audit fees in the second period minus natural log of external audit fees in the first period; fees are adjusted using the CPI;
ΔLNASSETS	=	Natural log of total assets in the second period minus natural log of total assets in the first period; assets are adjusted using the CPI;
$\Delta SUBS^{0.5}$	=	Square root of the number of consolidated subsidiaries in the second period minus the square root of the number of consolidated subsidiaries in the first period;
ΔINV	=	Change in the ratio of inventory to total assets between the second period and the first period;
ΔRECV	=	Change in the ratio of receivable to total assets between the second period and the first period.

In order to determine whether the assumption of heteroscedasticity is satisfied, a Goldfeld-Quandt test is performed. The F-statistics for the three periods are within the non-rejection area which indicate that the data may be accepted as homoscedastic. A Kolmogorov-Smirnov (K-S) test is performed to determine whether the assumption of normality of distribution of the data has been satisfied. The K-S test indicates that the data appears to be normally distributed.

Variance Inflation Factors (VIFs) are computed to determine whether serious multicollinearity exists among the independent variables. "A rule of thumb for evaluating VIFs is to be concerned with any value larger than 10.0" (Kleinbaum, Kupper and Muller, 1988, 210). For the three periods of observation, the largest VIF value is 2.4. Therefore, the results of the regression analysis do not appear to have multicollinearity problems.

7. Discussion

In 1985 and 1991, the NZSA amended its Code of Ethics to remove restrictions on competition among members. Previous studies suggest that such a change is associated with a decline in the level of audit fees (Maher et al., 1992; Sanders et al, 1995; Craswell, 1992). However, audit fees increased significantly between 1985 and 1990, then declined between 1990 and 1995. They show an increase over the entire period 1990-1995.

This result is not consistent with the results of the previous studies. However, those previous studies also provide evidence that a simple single-event explanation of the trends in fees is not sufficient. Maher et al. (1992) observe that the decline over the period after changes to permit more competition is part of a longer-term decline in audit fees. Craswell (1992) also observes declines in audit fees prior to deregulation in 1984 and comments that the decrease is more than would be expected as a result of the introduction of competition. The decline in fees observed by Sanders et al. (1995) is for a period commencing five years after the changes. These results suggest that there are other factors influencing audit fee trends. Several explanations for the results observed are provided below.

New Zealand differs from the countries examined in previous research because another change to professional regulations occurred in 1984. This allowed audit firms to use the names of their international affiliates. Previously they had been required to use the names of current or previous New Zealand partners. The change allows them to benefit from the reputation of the Big Eight firms. It has been shown that the major firms did not charge a fee premium on the early 1980s when they were required to use local names (Firth, 1985), but were able to do so later in the 1980s when they were able to use international names (Firth, 1993). This change may have led to the increase in audit fees between 1985 and 1990, as most listed companies were audited by Big Eight firms.

Another potential explanation is that the increased audit fees after 1985 might have been caused by the stock market crash in 1987. There was an increase in legal actions against auditors (Porter, 1990). It is possible that after the stock market crashed, auditors increased testing in order to reduce the risk of reaching the wrong opinion, thus protecting themselves from litigation (Johnson et al., 1995). By increasing their testing, auditors spent more audit hours and therefore increased the level of audit fees. In addition, the crash and the lawsuits led to increased costs of professional indemnity insurance. However, the crash also affected

Australian companies and auditors, and the results of Craswell (1992) indicate that Australian audit fees continued to decrease after 1987.

A further explanation can be proposed that encompasses the results of the earlier studies by Maher et al. (1992), Sanders et al. (1995) and Craswell (1992), together with the findings of those studies that fees were already declining before the changes in professional regulations and that the decrease was more than expected, and also with the results of this study showing an increase after the first change and a decrease after the second. That explanation reverses the causation implied by the previous studies. That is, deregulation does not cause more competition and reduced audit fees; more competition and reduced audit fees cause deregulation. This explanation economically accounts for the increase in audit fees after the 1985 deregulation in New Zealand – the economy was still protected from competition and there was less desire by audit firms to compete. The deregulation was simply a result of following overseas trends. But by 1991, the New Zealand economy had become competitive due to both the Commerce Act 1986 and the general liberalization of the economy. The clients of the audit firms, and the audit firms themselves, were aware of a need for greater competition, and the changes in the Code of Ethics were a way for the audit firms to achieve this. While this explanation can only be made tentatively, as we cannot establish the direction of causation, it seems at least as plausible as the alternative explanation that deregulation caused a reduction in fees.

As expected, the results of the tests carried out on data for the period 1990 to 1995 show a significant decrease in audit fees. The expected trend occurs in this later period, and not immediately after the 1985 amendment of the Code of Ethics. These findings may be due to the 1991 changes having a more substantial effect, possibly as a result of the liberalization of the economy discussed in the previous paragraph, or alternatively to "[a] later time interval allow[ing] a longer period of time for the effect of competitive changes to be revealed..." (Sanders et al., 1995, 105).

The entire period from 1985 to 1995 is also examined, allowing a longer time period for the effect of the 1985 changes to the Code of Ethics to take place. The results for the period from 1985 to 1995 also show an increase in audit fees, indicating that the factors responsible for the increased level of audit fees outweighed the effect of increased competition and other factors leading to a decrease in fees.

References

Accountant. (1999) Monopoly money? (Issue 5946): 16.

Accountants' Journal (1984) Publicity and Advertisement Discussion Paper December: 530-537.

Accountants' Journal (1985) Publicity and Advertisement - Important Changes to the Code of Ethics August: 6.

Anderson, T. and Zéghal, D. (1994) The Pricing of Audit Services: Further Evidence from the Canadian Market *Accounting and Business Research* (Summer): 195-207.

Chung, D. Y. and Lindsay, W. D. (1988) The Pricing of Audit Services: The Canadian Perspective *Contemporary Accounting Research* (Fall): 19-46.

Craswell, A. (1992) Audit Pricing in Australia 1980-1989 *Australian Accounting Review* May: 28-33.

Evans, L., Grimes, R., Wilkinson, B. and Teece, D. (1996) Economic Reform in New Zealand 1984-95: The Pursuit of Efficiency *Journal of Economic Literature* December: 1856-1902.

Firth, M. (1985) An Analysis of Audit Fees and Their Determinants in New Zealand. *Auditing: A Journal of Practice & Theory*, (Spring): 23-37.

Firth, M. (1993) Price Setting and the Value of a Strong Brand Name. *International Journal of Research in Marketing*: 381-386.

Francis, J. R. (1984) The effect of audit firm size on audit prices *Journal of Accounting and Economics,* August: 133-152.

Francis, J. R. and Simon, D. T. (1987) A Test of Audit Pricing in the Small-Client Segment of the US Audit Market *The Accounting Review*, January: 145-157.

Francis, J. and Stokes, D. (1986) Audit Prices, Product Differentiation and Scale Economies: Further Evidence from the Australian Market *Journal of Accountancy* (Autumn): 383-393.

Frankham, A. (1991) The New Code of Ethics – A Guiding Light *Accountants' Journal* October: 14-16.

Goldfeld, S. M. and Quandt, R. E. (1972) *Nonlinear Methods in Econometrics* North-Holland Publishing Company.

Hermanson, R. H., Dykes, L. M. and Turner, D. H. (1987) Enforced Competition in the Accounting Profession - Does it Make Sense? *Accounting Horizon* December: 13-19.

Johnson, E. N., Walker, K. B. and Westergaard, E. (1995) Supplier Concentration and Pricing of Audit Services in New Zealand *Auditing: A Journal of Practice & Theory*, (Fall): 74-89.

Kleinbaum, D. G., Kupper, L. L. and Muller, K. E. (1988) *Applied Regression Analysis and Other Multivariable Methods* (2nd Ed.), Boston: PWS-Kent.

Maher, M. W., Tiessen, P., Colson, R. and Broman, A. J. (1992) Competition and Audit Fees. *Accounting Review*, (January): 199-211.

Palmrose, Z. (1986) Audit Fees and Auditor Size: Further Evidence. *Journal of Accounting Research* (Spring): 97-110.

Porter, B. (1990) Facing the Liability and Credibility Crises. *Accountants' Journal* (June): 22-25.

Sanders, G., Allen, A. and Korte, L. (1995) Municipal Audit Fees: Has Increased Competition Made a Difference? *Auditing: A Journal of Practice & Theory*, (Spring): 105-114.

Simunic, D. A. (1980) The Pricing of Audit Services: Theory and Evidence. *Journal of Accounting Research*, (Spring): 161-189.

Vautier, K. M. (1987) Competition Policy and Competition Law in New Zealand. in Bollard, A. and Buckle R. (eds.) *Economic Liberalisation in New Zealand*, Wellington: Allen and Unwin.

Appendix A
Ordinary Least Squares Regression on LNFEE

Variables		Coefficient (Standard Error)		
		1985	1990	1995
Constant	β_o	-3.533 **	-3.486 **	-2.052 **
		(0.562)	(0.396)	(0.489)
LNASSET	β_1	0.539 **	0.619 **	0.475 **
		(0.060)	(0.039)	(0.048)
$SUBS^{0.5}$	β_2	0.292 **	0.142 **	0.238 **
		(0.064)	(0.040)	(0.055)
INV	β_3	1.564 **	0.905 *	0.569
		(0.559)	(0.418)	(0.470)
RECV	β_4	2.462 **	2.801 **	1.748 **
		(0.920)	(0.445)	(0.572)
n		63	100	91
Adjusted R^2		84.9%	81.7%	72.9%
F-statistic		88.13 **	111.71 **	61.45 **

* Significant at $p \leq 0.05$ (one-tailed test)
** Significant at $p \leq 0.01$ (one-tailed test)

LNFEE	=	Natural log of external audit fees
LNASSET	=	Natural log of total assets
$SUBS^{0.5}$	=	Square root of the number of consolidated subsidiaries
INV	=	Ratio of inventory to total assets
RECV	=	Ratio of receivables to total assets

Endnotes

[1] There is also provision for audits to be done by the Auditor-General and his staff, or by a member of "an association of accountants constituted outside New Zealand which is for the time being approved" by the Minister of Justice.

[2] The Big Eight firms internationally were reduced to six by the mergers in 1989 of Ernst and Whinney with Arthur Young to become Ernst and Young, and Deloitte Haskins and Sells with Touche Ross to become Deloitte Touche Tohmatsu. Arthur Andersen had been affiliated with a New Zealand firm but this arrangement ceased in 1987. Arthur Andersen subsequently established its own presence, but on a smaller scale than the other Big Six audit firms.

[3] Some previous studies use revenue as an alternative measure of size. We also repeated the tests using revenue, but this makes no difference to the findings.